

VERINT EDGEVR 200 INTELLIGENT DIGITAL VIDEO RECORDER (Rev A)

TECHNICAL SPECIFICATIONS

SECURITY SYSTEM

DIVISION – 28 ELECTRONIC SAFETY AND SECURITY

LEVEL 1 __28 20 00 ELECTRONIC SURVEILLANCE

LEVEL 2 __28 23 00 VIDEO SURVEILLANCE

LEVEL 3 __28 23 19 DIGITAL VIDEO RECORDERS AND ANALOG RECORDING DEVICES

PART 2 – PRODUCTS

2.01 GENERAL

- A. All equipment and materials used shall be standard components that are regularly manufactured and utilized in the manufacturer's system.
- B. All equipment and components shall have been thoroughly tested and proven in actual use.

2.02 GENERAL SPECIFICATIONS

- A. The Digital Video Recorder (DVR) or Network Video Recorder (NVR) shall process analog video inputs into digital data files utilizing H.264 Main Profile compression. The NVR shall contain an embedded OS, support recording frame rates of up to 1920 FPS, dual network connections, enhanced network packet throttling and flash memory to store system firmware and configuration. The NVR shall also support at a minimum:
 - a. Up to 64 video channel (Analog and IP cameras)
 - b. Up to 16 analog cameras
 - c. Up to 64 IP inputs from IP cameras or IP encoders
 - d. 2 audio inputs and 1 audio output
 - e. H.264 Main profile Video Compression for local analog cameras.
 - f. RAID 1 and RAID 5 storage option
 - g. Removable, State-of-the-art Serial ATA drives, for a total video storage capacity up to 12TB.
 - h. Simultaneous serial and IP interfaces to point-of-sale, access control, and alarm system data
 - i. Embedded operating system
 - j. Individual camera frame rate and resolution settings
 - k. IP camera resolutions up to 3 MegaPixels
 - l. Privacy masking
 - m. Remote monitoring with network packet throttling
 - n. Advanced diagnostics and enterprise management support
 - o. LAN connectivity for NVR configuration and investigation
 - p. Auxiliary LAN connectivity for IP camera network
 - q. Spot monitor standard output for video tour sequencing
 - r. Analog RGB (VGA) monitor for local settings and quad video
 - s. Digital RGB (DVI) monitor for local settings and quad or guard tour video.
 - t. Remote transfer of NVR video information in an executable file to USB compatible memory device or DVD-RW disc.
 - u. Single, password-protected video evidence file format
 - v. Ability to accept real-time transaction-based recording synchronized with selectable video inputs
 - w. Ability to select short and long term video retention time with file thinning based on motion and point of sale transactions.

2.03 OPERATING SYSTEM

- A. The NVR shall utilize a Linux based embedded stable OS that resides in on-board non-volatile flash memory. It shall not reside on internal or external Hard Disk Drives. The

NVR shall not use a standard PC based OS and should not require constant virus or OS patch management for proper security protection.

2.04 VIDEO PROCESSING AND COMPRESSION

- A. The NVR shall use H.264 Main Profile compression for the storage of the composite analog video into digital format.
- B. The NVR H.264 video compression engine shall use Context Adaptive Binary Arithmetic Coding (CABAC) for all recorded video.
- C. Compression quality shall be selectable with a minimum of five levels that can be programmed to maximize operational storage requirements.
- D. The compression quality shall be individually programmable for each camera. The NVR shall also support global levels for ease of use.
- E. The compression quality, frame rate and resolution shall be different between the live and recorded video stream of the same camera.
- F. For the analog cameras, the NVR shall provide a minimum resolution support of 352 x 240 expandable to 704 x 240 and up to 704 x 480 without the need for additional hardware.
- G. For IP cameras, the NVR shall provide a support of up to 3 mégapixels.

2.05 GENERAL RECORDING

- A. The NVR shall record up to 1920 frames per second of video for all the cameras.
- B. The NVR shall support a recording mode that records all video for a selectable programmable period after which time individual video frames can be removed for motion content.
- C. The NVR shall support motion based recording to delete unused video clips to extend storage requirements.
- D. The unit shall segment video recordings into three modes; short term, mid term and long term video.
- E. Short term storage should be programmable to record all video for a defined period of time.
- F. Mid term storage shall be assigned to motion only video.
- G. Long term storage shall be assigned to transaction and event related video

2.06 MOTION PROMPTED ARCHIVING

- A. The NVR shall support Motion-Prompted Archiving (MPA).
- B. The NVR shall have the ability of selecting motion only events to be stored from a master video file of all recorded video.
- C. Motion based video recording files shall be color coded for ease of search.

2.07 AUTHENTICATION AND PROTECTION

- A. The NVR shall use an Unalterable Image Format to maintain the security and integrity of the digital video files.
- B. The NVR shall use Secure Socket Layer (SSL) protocol to communicate configuration information to associated IP cameras or IP Encoders.

2.08 STORAGE

- A. The NVR shall be provided with a minimum of 500GB of storage and options for up to 12TB.
- B. The standard NVR shall support up to four removable hard disk drives.
- C. The NVR shall utilize Serial ATA disk drives that support higher transfer speeds, lower power consumption and do not use IDE ribbon cables.
- D. The Removable drive shall be secured behind a key lock mechanism
- E. The NVR platform shall be offered with optional support for RAID 1 configuration for up to 6TB redundancy.
- F. The NVR platform shall be offered with optional support for RAID 5 configuration for up to 9TB redundancy.

2.09 EVENT OFF-LOAD

- A. The unit shall include a front panel accessible USB port for event off load to USB storage.
- B. The unit shall have an option for a front panel accessible CD/DVD-RW drive bay for event off load to CD/DVD disc.
- C. The NVR shall transfer video files to the off load device along with an executable player to enable the playback of the video on a PC without additional player installation.
- D. The files stored on the event off-load device shall be password protected to help prevent unauthorized use of the captured video.
- E. Video event downloaded shall also be supported via the network port.
- F. The remote client shall provide the ability to select the offload file to be recorded at the local site offload device – via USB or DVD option.

2.10 SCHEDULES

- A. The NVR shall support program schedules related to individual days, weeks (7 days) or weekdays (Mon-Fri).
- B. Day mode – each day of the week should be programmed individually.
- C. Week – each day of the week should be programmed identically.
- D. Work week – weekdays (Monday through Friday) shall have the same schedule while weekends (Saturday and Sunday) support a different program setting.

- E. All schedules shall support individual programming for each camera

2.11 FRONT PANEL CONTROLS

- A. The NVR shall contain front panel controls to provide all NVRs configuration functions.
- B. The front panel shall include arrow keys for ease of menu selections and navigation.
- C. The front panel controls shall offer live and recorded video playback functions
- D. The NVR shall provide the ability of having an administrator lock out the front panel buttons to prevent unauthorized use.

2.12 FRONT PANEL INDICATORS

- A. A series of LEDs corresponding to up to 32 cameras shall be located on the front panel and provide camera connection status.
- B. The front panel shall contain LEDs to indicate: NVR power state, Hard Disk Drive fault, Video Exporting, Remote NVR connection, Locked out front panel, NVR errors, Hard Disk Drive connection state.

2.13 VIDEO INPUTS

- A. The NVR shall support up to 64 video inputs in a hybrid configuration of analog and IP cameras.
- B. The NVR shall ship pre-configured hardware that support 0, 8 or 16 analog cameras on the chassis.
- C. The analog input signal type shall be selectable for NTSC or PAL signals.
- D. The analog input signal level shall be 1Volt peak to peak, composite with 75 ohm termination. Inputs can be set to high impedance via a menu accessible software setting.
- E. The NVR shall support up to 64 external IP cameras input (In a mode with 0 analog camera on the NVR).
- F. The NVR shall support up to 48 external IP cameras input (In a mode with 16 analog camera on the NVR).
- G. The NVR shall support up to 30FPS per camera.
- H. The NVR shall support connection to IP cameras from third party camera vendors.

2.14 VIDEO OUTPUTS

- A. The NVR shall contain a minimum of 2 video outputs.
- B. The NVR shall contain one VGA (Analog RGB) video output.
- C. The NVR shall contain one composite video output. The output signal level shall be 1 volt peak to peak and 75ohm termination.
- D. The NVR shall contain one digital (DVI) video output.

- E. The NVR shall support to select the secondary monitor between the DVI and the composite outputs.
- F. There shall be an option for multiplexed video playback for single screen or quad view on the main monitor output.
- G. The secondary monitor output shall support sequenced full screen images independent of monitor output one.

2.15 AUDIO

- H. The NVR shall contain a minimum of 2 audio inputs.
- I. The NVR shall contain a minimum of 1 audio output.
- J. The NVR Software shall have an option to send pre-recorded audio message on the audio out channel.
- K. The NVR shall support live streaming of any of the audio input channels.

2.16 PRIVACY MASKS

- I. The NVR shall support privacy masking of the Analog and IP camera.
- J. The privacy mask shall be present on all the camera video feeds and it shall not be possible by anyways to retrieve the information masked by the camera.
- K. It shall be possible to define the privacy mask area on a per camera basis.

2.17 ALARM SIGNALING

- A. The NVR shall include 16 alarm inputs that can be programmed to trigger video events for the system.
- B. The alarm inputs shall be selectable for normally open or normally closed as well as either latching or momentary operation.

2.18 EVENTS

- L. The NVR shall support motion detection based events from the video signal.
- M. The NVR shall provide a mechanism to select an area within the image to apply motion detection based events.
- N. The NVR shall support alarm inputs (dry contact) based events.
- O. The NVR shall support serial port data based events. The data can come from different source such as ATM or Teller data lines.
- P. The NVR shall support ethernet data based events. The data can come from different source such as Web ATM or POS network devices.
- Q. The NVR events shall be pushed in real time to an external software for immediate investigation.
- R. The NVR events shall be stored locally for forensic investigation.

2.19 COMMUNICATIONS

- A. Network: The NVR shall include two Ethernet 10/100/1000 base T ports for TCP/IP LAN/WAN connectivity.
- B. The NVR shall be programmable for static or dynamic (DHCP) IP addressing.
- C. The NVR shall support multiple simultaneous user connections and operation for accessing live and recorded video.
- D. The NVR shall contain six (6) USB 2.0 ports (4 on back panel, 2 on front panel).
- E. The NVR shall provide a RS-232 port that can be used for transaction data and external device data gathering.
- F. The NVR shall contain a RS-422/RS-485 serial port for support of PTZ (pan-tilt-zoom) cameras with control from the client interface.
- G. The NVR shall contain a network interface for support of IP PTZ (pan-tilt-zoom) cameras with control from the client interface.

2.20 SYSTEM UPDGRADE

- A. The NVR shall support firmware upgrade from the network.
- B. The NVR shall provide a mechanism to gather the video from a NetDVR-II hard disk drive and transfer it to the NVR local hard disk drive. This mechanism shall provide system update from a NetDVR-II without lost of Video.

2.21 USER INTERFACE SOFTWARE

- A. The NVR shall be supplied with a client based software application that provides an easy-to-use graphical interface for the viewing, processing, playback and overall configuration of the system video processor.
- B. The interface software shall support an administrator and user level for remote access to the system. Only authorized access functions can be operated within these levels.
- C. The NVR shall provide support for at least four simultaneous remote connections for live and/or playback of video without any local degradation to video recording rate and quality.
- D. The interface software shall support to locally record live and playback video for faster video investigation in the already downloaded video.
- E. The NVR shall support identification of active users upon log on by the administrator.
- F. The on screen display area shall include automatic tiling and sizing of up to 16 dockable camera windows.
- G. The displayable cameras shall be individually selectable or automatically displayed and scaled based upon available playback input channel video.
- H. The software shall provide the ability to download firmware updates.
- I. The User Interface Software shall be hosted on a commercial off-the-shelf computer that meets the following specifications or better:
 - a. Windows 2000 or XP or Vista

- b. Direct X version 9 or later (www.microsoft.com/directx)
- c. Video adapter supporting at least 16 bit video (65,536 colors)
- d. Ethernet Network interface port
- e. 1024MB of RAM
- f. 64MB of Video Graphics memory
- g. DVD or CD burner for offloading event video files (optional)
- h. Free Hard Drive space for local video event storage (optional)

2.22 REMOTE PROGRAMMING FUNCTIONS

- A. All NVR program functions shall be supported by the client interface software including but not limited to:
 - a. Selection, addition and removal of remote accessible sites
 - b. Ability to select video input or inputs for live viewing
 - c. Ability to select video input or inputs for playback
 - d. Search for specific video images based upon time or date
 - e. Search for specific video images based upon transaction, number or event.
 - f. Program support for video recording modes
 - g. Programming of general, motion and event based recording
 - h. Scheduling of video image rates, resolution, and recording modes
 - i. User selectable resolution and quality settings
 - j. Network Throttling
 - k. Download buffering
 - l. Password Management
 - m. Time gap selection
 - n. Camera titles of 16 characters for each input
 - o. Alarm management, alarm system response and alarm scheduling

2.23 REMOTE SYSTEM DEVICE LOGS AND STATUS

- A. The NVR shall provide the means to view and download remote system properties showing the current set-up, programming and operational modes of the video processor including but not limited to:
 - a. Hardware version
 - b. Software version
 - c. Enabled system features
 - d. Number of cameras being used
 - e. Frame rate selection(s)
 - f. Motion recording mode
 - g. Compression resolution mode
 - h. Recording capacity modes and levels for short and long term settings
 - i. Drive information
 - j. Serial number(s)
 - k. Hard Drive SMART status
 - l. Disk free space
 - m. Data device connectivity
 - n. User log audit trail

2.24 SYSTEM ENTERPRISE MANAGEMENT SOFTWARE

- C. The NVR shall be compliant and available for optional system management software support. The system management optional software shall provide for health checks, device status log information, Hard drive status, camera input status, firmware upgrades, password management and other system wide functions.
- D. The NVR shall provide a Software Development Kit (SDK) to ease the integration to optional system management software. The SDK shall be based on Microsoft Windows Operating System.

2.25 MECHANICAL

- A. Dimensions: The maximum dimensions for a fully loaded model with four removable hard drive bays shall not exceed 3RU and overall dimension no larger than 15" w x 17" D x 5.25" H. (38cm x 43cm x 13cm)
- B. Weight: A fully loaded system configured with 4 drives shall weight no more than 29 lbs (13kg).
- C. Rack mount: The NVR shall not exceed 3RU. The unit shall include mounting hardware to be mounted into a 19" RETMA rack; self sustaining without the need of additional shelving supports other then the supplied rack mount brackets.

2.26 ENVIRONMENTAL

- A. Operating Temperature: 40-120° F (4 to 50° C)
- B. Humidity: 0 to 90% non-condensing.

2.27 ELECTRICAL

- A. Universal power supply capable of operation in domestic and international markets.
- B. 100-120VAC/200-240VAC and 50/60Hz selectable.
- C. One built in 12VDC outputs rated at 500mA
- D. Typical Power Consumption: 110 Watts (Under normal conditions, with 16 analog inputs and 4 drives)

2.28 REGULATORY AND COMPLIANCE

- A. FCC Class A Part 15
- B. Canada – ICES-003
- C. EN55022
- D. UL

2.29 INSTALLATION AND OPERATION INSTRUCTIONS

- A. The unit shall ship with a CD containing all installation and operating instructions.

2.30 WARRANTY

- A. The product shall contain up to 3-year warranty from the manufacturer.

2.31 VERINT MODEL NUMBERS

Revision Date: 2014-12-09

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|-------------------|-------------------------------------|
| A. E200-48-4000R | 16 Analog + 48 IP Ch - 4000GB RAID1 |
| B. E200-48-6000R | 16 Analog + 48 IP Ch - 6000GB RAID1 |
| C. E200-48-8000 | 16 Analog + 48 IP Ch - 8000GB |
| D. E200-48-9000R5 | 16 Analog + 48 IP Ch - 9000GB RAID5 |
| E. E200-48-12TB | 16 Analog + 48 IP Ch – 12TB |